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ABSTRACT

Creative Learning through the Application of Sociological Principles (CLASP) is a nontraditional program designed to help students develop their own concepts, theories, and skills during a nonstructured sociology semester. The program consists of seven phases: (1) first week: testing, simulating, and preparation; (2) second-third weeks: human relations and survival lab in wilderness; (3) fourth-seventh weeks: post-wilderness community problem solving upon return to campus; (4) eighth week: midterm evaluation; (5) ninth-twelfth weeks: skilled experiences; (6) thirteenth-fourteenth weeks: reporting, sharing, discussing, and analyzing; and (7) fifteenth-sixteenth weeks: evaluation and grading. A group of students who had completed two evaluation phases of an outdoor survival program and two different CLASP groups all involved in wilderness educational programs, were examined together with two control groups. The control groups were a conventional beginning class in sociology and a conventional T-group. Results significantly favor CLASP communities over T-groups and control groups in terms of sociological content, changes in self conception, and academic achievements. Strong positive reactions rated the CLASP program as the best learning experience in the students' college career. The program has created considerable "noise" in the traditional academic system for nontraditional education. Recommendations are made for institutions to adapt this survival-type program to the needs of each college department. (Author/BJG)

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EVALUATION OF ONE TYPE OF NON-TRADITIONAL PROGRAM OF HIGHER EDUCATION

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EVALUATION OF ONE TYPE OF NON-TRADITIONAL PROGRAM IN HIGHER EDUCATION

Boocock (1972, pp. 151, 311) observed that the conventional structure of modern education is not conducive to learning processes. University students and instructors have experienced a growing awareness that the modern curriculum tends to be a straight-jacket which retards student and faculty development (Staley, 1969). Tesconi (1972, p. 157) argued that the "homogenization imperative" of a factory system of education "trivializes man, (and) leads to impersonality in the school..."

One product of the discontent in the modern system of education is the rapidly growing use of wilderness-type curricula to provide remedies for problems found in modern educational programs. Several wilderness-type programs presently exist on various campuses in the nation, as evident in Shuff and Shuff (1972) and Barcus and Bergeson (1972). Wilderness-type programs have been used to help in the development of self-actualization, zeal, and other attributes of students. Attributes of zeal, motivation, determination, self-actualization, and so forth, have been considered to be major determinants of academic success in higher education. The Monthly Newsletter by the Royal Bank of Canada (1974) stated:

> Charles Darwin held the opinion as the result of a lifetime of critical observation that men differ less in capacity than in zeal and determination to utilize the powers they have.

Educators have theorized that attributes of self-concept can improve the academic success of students in most campus departments and colleges. Research is needed to determine the extent to which the wilderness-type program can be

adapted to the various departments and the extent to which these attributes of self-concept influence academic success.

Use of Wilderness-Type Programs.

One of the major problems in using non-traditional programs in higher education is evaluating their success. The appropriate research methodology to be used is determined by the goals of the educational program, just as the statistical analysis depends upon the research question involved. Evaluation resulting from various types of non-traditional programs have been somewhat equivocal because of their evaluation methodologies. Foulds (1971), Clifford (1967), and Adams (1969) reported significant changes in self-concept. The changes, however, varied from study to study. Treppa and Fricke (1972) and the counseling center staff of the University of Massachusetts (1972) reported no significant differences in measured outcomes for group experiences.

Variations between results of various studies are attributable to variations in the purposes of the studies. Grossman (1967) and Maynard (1969) used wilderness training programs to help juvenile delinquents. A number of programs have been used to improve the academic performance of potential "drop out" students, as reported by Berry (1966), Lingo (1966), and Moses and Peterson (1970).

Barcus and Bergeson (1972) and Stimpson and Pedersen (1970) emphasized the need to determine the permanence of self-concept changes resulting from wilderness training programs. Previous studies have lacked the longitudinal research to examine permanency. Another methodological problem in most of the previous studies is lack of a control group. Barcus and Bergeson (1972) stated in review that "only one study (Moses and Pedersen, 1970) used a comparison with a control group." Other problems found in previous studies include extremely

small sample sizes and problems of statistical procedures such as the use of multiple t-tests.

Research Objectives.

The present study was designed to avoid the problems found in previous studies. The research purpose was four-fold. The first purpose was to evaluate the accomplishments in terms of the objectives of the non-traditional programs in higher education; second, to evaluate the achievement of participants and their reactions to the program; third, to ascertain the adaptability of such programs to various on-campus departments in institutions of higher education; and fourth, to provide appropriate recommendations to administrative officers of the university as to the relative contribution of the program to the university.

Methodology.

The group of students who had completed two evaluation phases of an outdoor survival program and two different CLASP (Creative Learning through the Application of Sociological Principles) groups, all involved in wilderness-type educational programs, were examined together with two control groups. The control groups were a conventional, on-campus beginning class in sociology and a conventional on-campus T-group. A total of 201 students were examined in the analysis: 21 students who had completed the two outdoor survival-group phases, 61 in the two CLASP groups, 86 in the sociology control group, and 33 students in the on-campus T-group. There were two concurrent CLASP groups taught by two different instructors: 30 students in CLASP I and 31 in CLASP II. Since the groups were of necessity intact classes, robustness of statistical analysis referred to by Stigler (1973, pp. 872-879) was assumed for the analysis.

Outdoor Survival. Students in the survival group registered for Youth Leadership 480 (Outdoor Survival) at Brigham Young University, Summer and Fall semesters of 1971. The survival experience is a five-phase program following an initial two-day campus instructional activity. The five phases of the thirty-day program are entitled Impact, Group Expedition, Survival, Small Group Expedition, and Solo. The Impact phase consists of three days of total or large group activities which include a forty-mile hike and living off the land. In the Group Expedition phase, separate male and female groups encounter a 70-80 mile hike and are involved in mutual goal setting and cooperative problem solving. In the Survival phase, the entire large group satisfy their total needs entirely off the land for a six-day period. In the Small Group Expedition, four to five students tackle cross-country problems for four to five days in an 80-mile hike. In the Solo phase, students are in a four to five day wilderness isolation situation. The survival experience program is based on the conviction that more is learned through active participation than through passive acceptance. Learning activities are specifically designed to develop greater self-actualization.

Adaptations. Adaptations of wilderness programs to objectives of various departments on campus are examined according to the goals of the departments. Examples of the adaptation of wilderness programs to campus departments include the use of wilderness experiences in the sociological CLASP program and the use of outdoor survival experiences in readmitting students to the university who have been suspended on academic failure.

The CLASP program was devised as a "sociology semester" (Sundeen, 1972) and was established to help the student develop his own concepts, theories, and skills. The program for each semester is formulated according to the needs of the students. One of the paramount elements of this type of non-traditional

education is the use of non-structured curricula. The student is placed in an environment where he or she tests out relationships of his own emerging goals with those of other students and faculty. In student decision-making, the student is given increasing responsibilities for self-direction throughout the semester.

The program consists of seven phases: 1) first week: testing, simulating, and preparation; 2) second-third weeks: human relations and survival lab in wilderness (elements of outdoor survival adapted to sociological principles, theories, and techniques); 3) fourth-seventh weeks: post-wilderness community problem solving upon return to campus; 4) eighth week: midterm evaluation; 5) ninth-twelfth weeks: skilled experiences; 6) thirteenth-fourteenth weeks: reporting, sharing, discussing, and analyzing; and 7) fifteenth-sixteenth weeks: evaluation and grading.

Students included in the readmission adaptation analysis were those suspended from the university for academic failure. The suspended students were readmitted through one of four different voluntarily selected programs. The four available programs for readmission are: first, college work at another institution of higher education with a specified minimum grade point average (GPA); second, completion of specified correspondence courses with a minimum GPA; third, acceptance by a readmission committee in response to a special request of the student based on particular evidence of academic capability; and fourth, satisfactory completion of the outdoor survival training class (Youth Leadership 480). Sample sizes of the four groups examined in this phase of the study were 102 students in the College Work group, 58 students in Correspondence, 37 in Survival Program, and 74 in Committee Decision. Success of the survival program in preparing suspended students for readmission was measured

in terms of mean GPA and percent of students successfully completing their first semester after readmission.

Evaluation measures were administered to students to provide a basis for statistical analyses of student changes in mental health, sociological content knowledge, and overall conception of the program. Mental health or self-actualization was measured using the Tennessee Self-Concept Scale and the Personal Orientation Inventory (POI). Although other types of self-concept measures have been used by some researchers (Clifford and Clifford, 1967; Stimpson and Pedersen, 1970; Treppa and Fricke, 1972), the Tennessee Scale and the POI have apparently had more widespread usage (Heaps and Thorstenson, 1973, 1974; Barcus and Bergeson, 1972; and McClain, 1970). In addition to its use in identifying self-concept (Foulds, 1971; Fox, 1968; and Knapp, 1965), POI has been used by therapists as a diagnostic instrument to measure a patient's current level of positive mental health or self-actualization (Shostrom, 1964). It has been reported that the POI differentiates between groups of subjects designated by clinicians as representing different categories of self-actualization (McClain, 1970; Shostrom, 1966; and Fox, Knapp, and Michael, 1968).

The Tennessee Scale and the POI were each administered in the form of pre- and post-tests to various survival, CLASP, and control groups. The form used for the Tennessee Scale specifies 17 attribute classifications: physical self, moral and ethical, behavior, self-satisfaction, identity, self-criticism, personality integration, social self, family self, personal self, total positive, neuroticism, personality disorder, general maladjustment, defensive positive, number deviant signs, and psychotic.

Sociological content knowledge was measured by pre- and post-forms of final examinations. The final examination forms were constructed by Individual

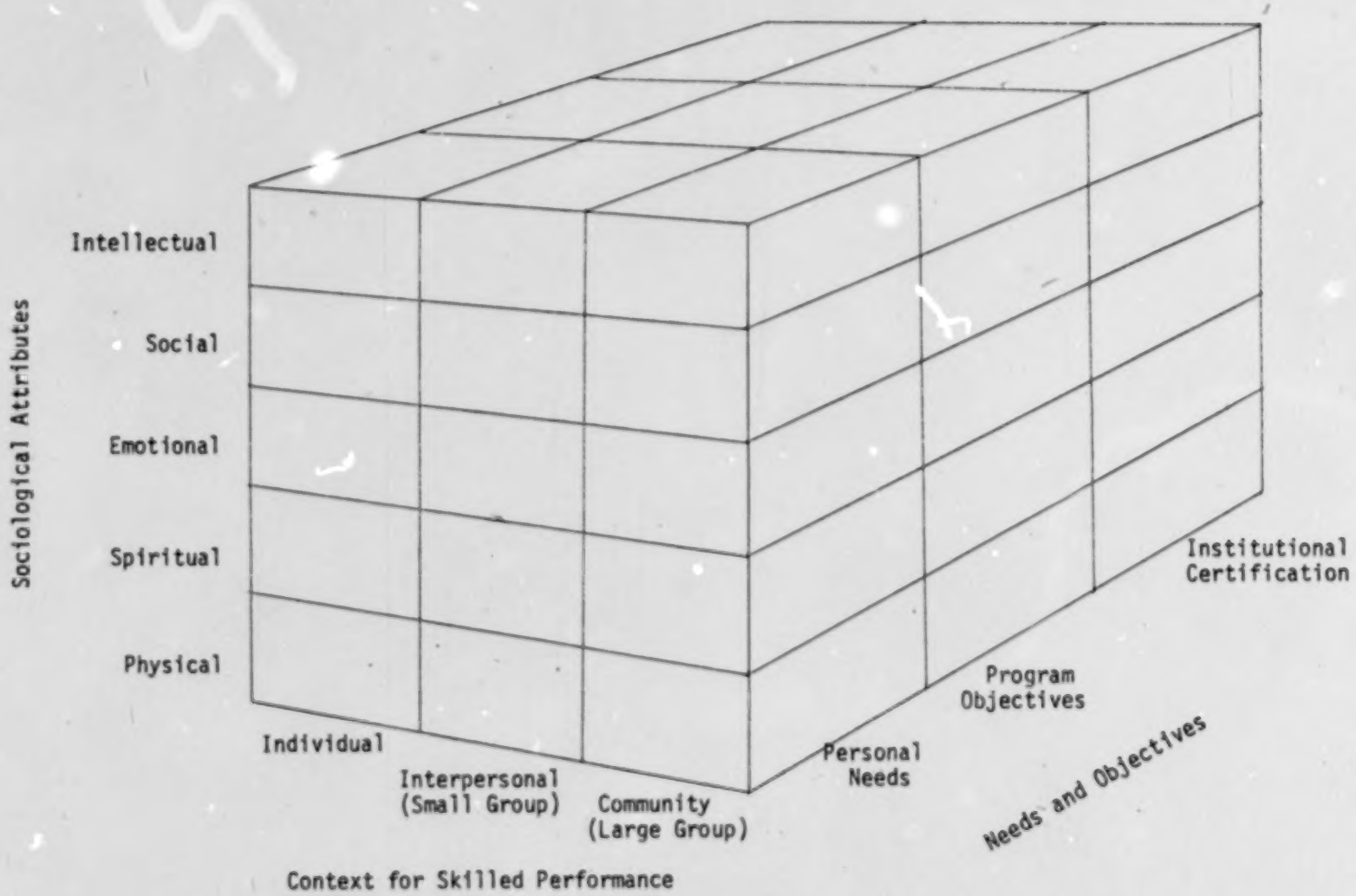
Learning Systems, Inc. (ILS) and were designed for beginning courses in sociology (Kinch, 1971). The ILS forms were administered to both CLASP groups and to a control group.

Students' overall attitudes towards the program were analyzed using follow-up questionnaires. The questionnaires asked the students to compare the CLASP program with the best other semester of their university life in relation to: first, learning acquired; second, personal growth, and third, the "excitement" about learning.

Multi-Dimensional Evaluation. Snow (1974) suggests that there is a compendium of outcomes from any educational experience. Unexpected outcomes may result from new learning methods in unfamiliar surroundings involving undiscovered principles. Non-traditional methodology and outcomes suggest a need for a multi-dimensional research model. In considering a multi-dimensional model for evaluating wilderness-type programs, one dimension shown in Figure 1 is the "Context for Skilled Performance" in terms of size of the group being evaluated, whether individual, small group, or large samples. A second dimension adds other attributes to be analyzed. Five sociological attributes listed in Figure 1 are intellectual, social, emotional, spiritual, and physical. There remains yet a third dimension, that of needs and objectives. In the educational setting for wilderness-type educational programs, objectives include Personal Need Fulfillment, Program Objectives, and Institutional Certification. Adding the third dimension to the two-dimensional model provides a more complete approach to evaluation and illustrates the complexity of the problem.

Evaluation for the complex multi-dimensional model requires continuation of present research for longitudinal analysis in addition to extending the dimensions of existing research. Results of present research may be considered

FIGURE 1
Integrated Model for Evaluation Areas of Competency



to be only preliminary in light of the multi-dimensional model of research.

Preliminary Results

Statistical and descriptive analyses reflect significant attribute changes for the wilderness-type groups over those of the control groups. A certain amount of mental health improvement was found to be unique to the outdoor survival group. Some of the results from the CLASP group were consistent with those from the survival group and others were different. Consistencies and deviations between results of the two programs can be expected since the CLASP program adapted only certain wilderness-type elements from the survival program.

Only the attributes in the Tennessee Self-Concept Scale which were significant for at least one of the groups examined were included in Table 1. Six of the attribute changes identified in the immediate results were also observable in the one-year results for the survival group: physical self, moral and ethical, behavior, self-satisfaction, identity, and personal self. Three of these same attributes were also common to the results for both CLASP groups: behavior, social self, and personal self. No significant change on the Tennessee Scale was found for either the T-group or the conventional class. All of the attributes listed in Table 1 were significant for CLASP I. The differences between the significant results for CLASP I and CLASP II can be explained in terms of different instructors for the group and individual differences between the two groups.

The results in Table 1 indicate a degree of permanency for certain attribute changes for the survival group. Certain attribute changes also appear to be common to each of the wilderness-type programs, but not to the control groups. Finally, certain additional attributes are unique to the CLASP group contrasted to the survival and control groups.

TABLE 1

SIGNIFICANT† CHANGES IN SELF CONCEPT FOR VARIOUS EXPERIMENTAL GROUPS FOR WILDERNESS-TYPE EDUCATIONAL PROGRAMS

Attribute	Survival (Immediate)	Survival 1 yr.	CLASP I	CLASP II	T Group	Control Group
Physical Self	↑	↑	↑			
Moral and Ethical	↑	↑	↑			
Behavior	↑	↑	↑			
Self-Satisfaction	↑	↑	↑	↑		
Identity	↑	↑	↑			
Self-criticism						
Personality Integration						
Social Self		↑	↑	↑		
Family Self	↑		↑			
Personal Self	↑	↑	↑	↑		
Total Positive	↑		↑			
Neuroticism			↓			
Personality Disorder			↓			
General Maladjustment			↓	↓		
Defensive Positive			↓	↓		
Number Deviant Signs						
Psychotic						

†Arrow denotes direction of significant change, $p < 0.05$, between pre- and post measures of the Tennessee Self Concept Scale; direction of arrow indicates positive (↑) or negative (↓) change.

Significant changes for students in both CLASP groups were identified for five of the attributes in the Tennessee Self-Concept Scale listed in Table 1. Three of the attribute changes unique to both CLASP groups are improvements in neuroticism, personality disorders, and general maladjustment. There was also a significant increase between pre- and post-tests for defensive positive.

Results of the POI test in measuring mental health or self-actualization confirm the results from the Tennessee Self-Concept Scale in that none of the scales showed significant changes for the control groups, but five were significant for both CLASP groups.

Sociological Content Knowledge.

The results of the analysis on sociological content knowledge for the CLASP groups were listed in Table 2. Both CLASP groups had a significant increase in the amount of sociological content knowledge for the CLASP semester. The control group, a conventional on-campus beginning course in sociology, had no significant increase between scores on the pre- and post-forms of the ILS final examination tests. The results indicate that the CLASP program affected significant changes in the students' sociological content knowledge as measured by the ILS examination forms.

Readmission of Suspended Students.

Students seeking readmission were given their choice among four methods of qualifying for readmission: academic work at another institution of higher education, correspondence work at Brigham Young University, successful completion of the survival program, or committee action on appeal.

Although the mean GPA was highest for the "Survival" group and lowest for the "Committee" group, the GPA's for both first semester (GPA - 2.45 and 2.15

TABLE 2

Sociological Content Knowledge of CLASP and Control Groups as Measured by Pre- and Post-Tests[1] Fall Semester 1973

Group	N	Pre-test		Post-test		Change
		$\bar{X}$	S	$\bar{X}$	S	
CLASP I	31	61.6	1.4	69.7	1.5	+8.1 sig.[2]
CLASP II	30	64.3	1.5	71.0	1.7	+6.7 sig.
Control	86	53.6	2.0	54.8	2.9	+1.2 n.s.

[1]Tests: Individual Learning Systems, Inc., Final Exam A. and Final Exam B. (1st ed.)

[2]$p < 0.05$

respectively) and cumulative (2.10 and 1.70 respectively) were not significantly different. The fact that there was no significant difference in mean GPA among the four groups indicates that the four methods used for readmission were equally successful as measured by mean GPA. The percent of students per group who obtained a mean GPA acceptable for their first semester after readmission is also listed in Table 3. There was no significant difference among the four groups in the percent of those who were successful after readmission to the university. Since there was no significant difference among the four groups, the survival program was considered to be successful in qualifying students for readmission to the university. The academic success of students in the survival program was especially noteworthy since the program was basically non-academic. The survival program, in addition, was only 30 days in duration compared to a full 16-week semester of academic work for the Academic Work and Correspondence Work groups. If a student does not have the necessary credentials to be admitted by committee action on appeal, readmission through participation in the survival program could be highly recommended.

Non-Traditional Evaluation.

Traditional evaluation seldom considered feelings and attitudes left upon the students by their experience in the program. Descriptive analyses were, therefore, made of the overall impact of the program on student participants. Responses were recorded to questions which asked participants in the CLASP program to make various comparisons of their CLASP semester with their best other semester. The results from this descriptive analysis follow. Approximately 89.7% of the participants rated their CLASP semester as the best overall semester in their college career. Only 6.9% rated CLASP equal to the best other semester, and 3.4% rated CLASP below their best semester. In addition, 96.6%

TABLE 3

Comparative Academic Success of
Readmitted* Suspended Students

Option Selected to Qualify for Readmission	N	$\bar{X}$ GPA First Sem.	Std. Dev.	Cum. $\bar{X}$ GPA as of Sum. 1973	% of Group Successful
Academic Work at Other College	102	2.44	.91	1.90	78
Correspondence Work	58	2.33	.92	2.09	78
Survival Program (YL 480)	37	2.45	.80	2.10	76
Committee Action on Appeal	74	2.15	1.08	1.79	70

*Readmission Applicants 1969-1972

rated CLASP as their best semester for "excitement" about learning. The following excerpts are typical responses from students in wilderness-type programs.

Male Student:

> The contrast between my first semester and CLASP is overwhelming. It was like going from darkness into light...This semester I spent hours in the library going down the shelves, reading whatever looked interesting...doing and learning because I was interested and wanted to.

Female Student:

> I would spend two or three hours writing in my journal...I read ten books completely and started three others...I never worked so hard and spent so much time in terms of reading. Never before did (sic) I spend from seven in the morning 'til nine at night <u>in the library</u>.

Students in general indicated that wilderness-type programs greatly contributed to their university life and rated the programs as the best experience of their entire college career.

Preliminary Conclusions.

The results of the analysis thus far conducted indicate that specific measurable accomplishments have been made by students in the various wilderness-type programs. Students in wilderness-type programs improved in mental health more than students in the traditional courses as measured by two evaluation instruments nationally used in therapeutic fields. Students in a wilderness-type sociological program excelled in sociological content knowledge as measured by ILS final examinations in contrast to students in the traditional sociology course at the university. Another accomplishment in the use of wilderness-type programs was the preparing of students for successful readmission who had been suspended from the university for academic failure.

Participant reactions to the program were found to be positive. Participants also rated the program as the best experience in their university life. The success of adapting wilderness-type programs to some on-campus departments also indicates that successful adaptation can be expected for other departments and colleges. Adaptation and extent of use would, of course, vary according to the given department and corresponding objectives.

A negative aspect of wilderness-type programs is the risk of physical casualty. Although some groups have reported that no fatalities and few or no accidents have occurred, some have been reported with other groups. A negative result of the CLASP program also appears to be in the area of "defensive positive" on the Tennessee Self-Concept Scale. Further research is suggested for this attribute to determine if negative change is desirable. If the change is found to be undesirable, further research would then be needed to determine how the program could be changed to produce more desirable results.

The results from the data analyzed confirm results from previous studies in that significant improvements were found in attributes of mental health for students in general and in grade point average for underachievers. Significant changes in attributes of mental health reported in the present study differ from those reported in previous studies. The particular attributes found to change significantly depended upon the particular wilderness-type program examined and on the individual instructors or administrators of the program.

Challenges for Future Evaluation.

It was discovered in the evaluation that additional research is needed to more completely define objectives of the programs and the techniques for evaluating their success. The statistical procedures used in evaluating a program

depend upon the objectives of the program. Existing tests are often used when it would be more appropriate to first structure the research approach to evaluate the program and then construct appropriate tests and measures accordingly.

One of the major problems in evaluating wilderness-type programs in higher education is isolating the phases of the program which contribute to a given change in the student's attitude and behavior. It has been difficult to randomly assign the students to a given program or phase of the program since one of the major purposes of the program is to encourage freedom in decision making. The groups analyzed to date have consisted of intact groups resulting from voluntary selection. Further research is needed, however, to isolate the effective elements in the program.

Another challenge for the research is to identify the parameters of the various cells in the multi-dimensional evaluation model for wilderness-type educational programs. Research is needed to identify and measure possible unknown influences of the multi-phase program, both immediate and longitudinal, in the lives of students. Another dimension of analysis is to examine the effects of motivation generated by the wilderness-type program on the students' academic success in general at the university. Further research is planned to analyze academic success of readmitted students who were suspended for academic failure. Additional longitudinal analyses are also needed to determine the extent to which changes are retained by the students over a prolonged period of years and to determine the extent to which the changes are desirable.

REFERENCES

Adams, W. D. Survival Training: Its effect on the self-concept and selected personality factors of emotionally disturbed adolescents. Unpublished doctoral dissertation. Utah State University, Logan, Utah, 1969.

Barcus, C. G. and Bergeson, R. G. Survival training and mental health: A review. Therapeutic Recreation Journal, First Quarter 1972, Vol. 6, 3-7.

Berry, James R. Rugged camps turn boys into iron men. Popular Mechanics, 1966, 125, 116-119.

Boocock, S. S. Introduction to the Sociology of Learning. (New York: Houghton Mifflin, 1972).

Clifford, E. and Clifford, M. Self-concepts before and after survival training. British Journal of Social Clinical Psychology, 1967, No. 6, 241-248.

Foulds, M. L. Measured changes in self-actualization as a result of a growth group experience. Psychotherapy: Theory, Research and Practice, Vol. 8, No. 4, Winter 1971, pp. 338-341.

Fox, J., Knapp, R. R., and Michael, W. B. Assessment of self-actualization of psychiatric patients: Validity of the personal orientation inventory. Educational and Psychological Measurement, 1968, 28, 565-569.

Grossman, E. A Rough Cure for Adolescence.

Heaps, R. A. and Thorstenson, C. T. Self-concept changes immediately and one year after survival training. Therapeutic Recreation Journal, Second Quarter, Vol. IX, No. 2, 30-33.

Kinch, J. W. Introductory Sociology. San Rafael, California: Individual Learning Systems, Inc., 1971.

Knapp, R. R. Relationship of a measure of self-actualization to neuroticism and extraversion. Journal of Consulting Psychology, 1965, 29, 168-172.

Lingo, T. D. Dropping back into high school. Education for May, 1966.

Maynard, A. L. Nature as teacher. Saturday Review, 1969, 52, 76-77.

McClain, E. W. Further validation of the personal orientation inventory: Assessment of self-actualization of school counselors. Journal of Consulting and Clinical Psychology, 1970, Vol. 35, No. 2, 21, 22.

Moses, D., and Peterson, D. Academic achievement helps programs. Provo, Utah: Brigham Young University Academic Standards Office, 1970.

Shostrom, E. L. An inventory for the measurement of self-actualization. Educational and Psychological Measurement, 1964, 24, 207-218.

Shostrom, E. L. Manual for the Personal Orientation Inventory (POI). An inventory for the measurement of self-actualization. San Diego, California: Educational and Industrial Testing Service, 1966.

Shuff, J. and Shuff, R. V. Designed for excellence: A program for laboratory experiences. The Journal of Teacher Education, Vol. XXIII, No. 2, Summer 1972, 212-219.

Snow, Richard E. Representative and quasi-representative designs for research on teaching. Review of Educational Research, Vol. 44, Summer 1974, 265-291.

Staley, J. S. Escape from the cage of social systems. Human Potential, 1967, 1, 31-33.

Stigler, S. M. Simon Newcomb, Percy Daniell, and the history of robust estimation 1885-1920. Journal of the American Statistical Association, December 1973, Vol. 68, Number 344, pp. 872-879.

Stimpson, D. V. and Pedersen, D. M. Effects of a survival training experience upon evaluation of self and others for underachieving high school students. Perceptual and Motor Skills, 1970, 31, 337-338.

Sundeen, R. The sociology semester: A proposal for innovative teaching in undergraduate sociology, 1972. Paper read at ASA meeting, 1973.

Thorstenson, C. T. and Heaps, R. A. Outdoor survival and its implications for rehabilitation. Therapeutic Recreation Journal, First Quarter 1973, Vol. VIII, No. 1, 31-33.

Treppa, J. A. and Fricke, L. Effects of a marathon group experience. Journal of Counseling Psychology, 1972, Vol. 19, No. 5, 466-467.

Tesconi. The Anti-Man Culture. (Urbana: University of Illinois Press, 1971, c1972).

University of Massachusetts Counseling Center Staff. The effects of three types of sensitivity groups on changes in measures of self-actualization. Journal of Counseling Psychology, 1972, 19, 253-254.